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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/728,310	12/04/2003	Marvin M. Johnson	2253-01101	9636
23505	7590	09/20/2005		
CONLEY ROSE, P.C. P. O. BOX 3267 HOUSTON, TX 77253-3267			EXAMINER GRIFFIN, WALTER DEAN	
			ART UNIT 1764	PAPER NUMBER
DATE MAILED: 09/20/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/728,310

Applicant(s)

JOHNSON ET AL.

Examiner

Walter D. Griffin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 02 August 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-56 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-56 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on August 2, 2005 has been entered.

### ***Response to Amendment***

The rejections described in the office action mailed on May 6, 2005 have been withdrawn in view of the amendment and remarks filed on August 2, 2005. There is no suggestion in the DeRosset reference that the presence of carbon monoxide would be advantageous in a liquid phase hydrogenation process as disclosed in the Johnson reference. The DeRosset reference is drawn to a gas phase hydrogenation process. Because of the withdrawal of the rejections, the arguments concerning these rejections are moot and will not be addressed.

New rejections follow.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-3, 10-12, 17-21, 26-28, 34, and 40-51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson et al. (US 3,755,488) in view of Collins (US 4,126,645) and Obenaus et al. (US 4,517,395).

The Johnson reference discloses a hydrogenation process. The process comprises contacting an olefin stream that contains alkynes with an absorbent to selectively absorb the alkynes and to produce an alkyne-enriched absorbent phase. The absorbent is then contacted with hydrogen and a catalyst under hydrogenation conditions including co-current flow in a reactor such as a fixed bed or trickle bed reactor to hydrogenate the alkynes in the absorbent. The absorbent is then separated from the mono olefins produced in the hydrogenation step. The absorbent may be NMP. The catalyst comprises a Group VIII metal on a support such as alumina. In the hydrogenation step, the alkynes are essentially completely converted. This

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clearly discloses the hydrogenation of 90% or more of the alkynes. See column 1, lines 21-26 and 58-68 and column 2, line 1 through column 3, line 54.

The Collins reference discloses that the presence of carbon monoxide during liquid phase hydrogenation is advantageous. See column 4, line 55 through column 5, line 30.

The Obenaus reference discloses that any amount of carbon monoxide present above a minimum amount during the liquid phase hydrogenation of hydrocarbons provides for the advantage of selective hydrogenation. See column 2, line 37 through column 3, line 10.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Johnson by including carbon monoxide in any amount above a minimum as suggested by the combined teachings of Collins and Obenaus because the selectivity of the hydrogenation process will be improved.

Claims 4-9, 13-16, 22-25, 29-33, 35, 36, 38, 39, and 52-55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson et al. (US 3,755,488) in view of Collins (US 4,126,645) and Obenaus et al. (US 4,517,395) as applied to claims 1-3, 10-12, 17-21, 26-28, 34, and 40-51 above, and further in view of Dai et al. (US 2002/0068843 A1).

The previously discussed references do not disclose that the catalyst comprises a second metal as in claims 4-9, 13-16, 22-25, 29-33, 35, 36, 38, 39, and 52-55.

The Dai reference discloses a selective hydrogenation catalyst that contains metals such as those claimed in claims 4-9, 13-16, 22-25, 29-33, 35, 36, 38, 39, and 52-55. See paragraphs [0010]-[0019].

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the teachings of the previously discussed references by

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utilizing a catalyst that contains the metals as in claims 4-9, 13-16, 22-25, 29-33, 35, 36, 38, 39, and 52-55 as suggested by Dai because catalysts that contain these metals have higher selectivity and activity.

Claims 4-9, 13-16, 22-25, 29-33, 35-37, 39, 52-54, and 56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson et al. (US 3,755,488) in view of Collins (US 4,126,645) and Obenaus et al. (US 4,517,395) as applied to claims 1-3, 10-12, 17-21, 26-28, 34, and 40-51 above, and further in view of GB 871804.

The previously discussed references do not disclose that the catalyst comprises a second metal as in claims 4-9, 13-16, 22-25, 29-33, 35-37, 39, 52-54, and 56.

The GB reference discloses a selective hydrogenation catalyst that contains metals such as those claimed. Specifically, gallium, zinc, and indium are disclosed. See page 1, lines 51-80.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the teachings of the previously discussed references by utilizing a catalyst that contains the metals as in the claims as suggested by the GB reference because catalysts that contain these metals have improved activity in producing the desired olefin products.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter D. Griffin whose telephone number is (571) 272-1447. The examiner can normally be reached on Monday-Friday 6:30 to 4:00 with alternate Fridays off.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Walter D. Griffin  
Primary Examiner  
Art Unit 1764

WG  
September 16, 2005